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ABSTRACT

A study of administrators, teachers, and students at 19 community colleges was conducted in order to better understand the individual groups served by satellite technology in distance education programs. Along with demographic information, the following issues were investigated: (1) learning styles most commonly used at each institution; (2) levels of knowledge about alternative delivery systems; (3) attitudes toward educational technology; (4) attitudes toward the use of communications satellites; (5) the level of administrative support to be expected; (6) faculty attitudes toward educational technology in relation to their teaching styles and in relation to their curricula; (7) student attitudes toward educational technology in relation to their major curricula; (8) faculty attitudes toward communications satellites in relation to their disciplines; and (9) student attitudes toward communications satellites in relation to their major curricula. Recommendations include purchasing a satellite dish to demonstrate the benefits of satellite use to downlink sites, launching public relations campaigns to inform potential users about the technology, communicating with schools currently using satellite systems in order to gather accurate cost data, determining which curricula are best suited to the introduction of satellite technology, conducting staff development programs to support technology integration, and informing faculty of educational technology facilities and services available at their schools. (GL)

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DISTANCE LEARNING VIA SATELLITE BEGINS WITH ANALYSIS OF THE USERS

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For years, education has been grasping at new technologies for the ideal educational tool. Many forms of instructional technology have come and gone in the last fifteen years. Some were acquired on the recommendation of equipment vendors. Others were purchased with the hope of being on the leading edge and, if successful, would mean a feather in the cap of the individual who thought of it. There are problems with acquiring instructional technology in this manner. The first example is almost always sold by a vendor who is usually biased with the opinion of his own product. In the second example, the individual has good intentions but there is invariably a good chance for failure.

Education via an educational satellite system is not exempt from these problems. This is why the first step in considering the adoption of this technology as an educational delivery system should be to better understand the individual groups (students, faculty, and administration) that will be using and served by such a system. The administration must be considered because of their problems with obtaining financial backing, curriculum adoption, and class scheduling. The faculty must be considered because they are the individuals that have to work with the technology and see that the system operates effectively. The students are the most affected since they are the recipients of the information and are the reason for the existence of the educational process.

In order to consider these three groups and their problems, research was conducted using a group of nineteen community colleges. The study looked at these three groups in order to get a better understanding of their attitudes, perceptions, and styles of teaching in regard to technology, facilities, and level of knowledge in various areas that were applied to distance learning via satellite.

In order to get a complete picture of the three groups, a determination was made as to what information should be gleaned from the participants that would give the appropriate information required for making decisions for a distance learning system.

Along with demographic information, the following were investigated and the results are reported.

1. **Learning Styles:** Students and faculty were not in total agreement as to what style was most commonly used at their institutions. Both indicated that the lecture method was the most dominant but faculty felt that the use of media materials was in greater usage than did the students. The majority of faculty had never tried teaching styles other than lecture with the use of media materials.

2. **Levels of Knowledge:** Administrators and faculty were questioned as to their knowledge in the areas of institutional facilities, alternative delivery systems, and satellite communications. In all instances, the administrators were the most knowledgeable. However, when it came to identifying various kinds of satellite terminology, neither the faculty nor administrators were very knowledgeable.

3. **How the Participants Felt About Educational Technology:** According to the three groups, educational technology is of great value in education and should continue to be steadily emphasized. Of the three groups surveyed, the administrators showed the greatest support for educational technology.

4. **How Individuals Felt About the Use of Educational Satellites:** Using satellites for distance learning was looked upon favorably by all three groups, but none were over-zealous about the idea. Of the three groups, the administrators were the most supportive.

When considering the use of satellites for international education, the administrators had mixed feelings regarding the future of satellites in international education.

5. **The Level of Administrative Support:** Administrators were very willing to support educational technology in general but were found to be spending very little for alternative forms of delivery. Even though some administrators were not budgeting any funds for alternative delivery systems, they still felt very strongly about its value for education.

6. **How Faculty Felt Toward Educational Technology in Relation to Their Teaching Styles:** Lecturing and using media materials was the dominant style of teaching. Those faculty whose teaching style was using lecture only were consistently less convinced of the benefits of technology in education.

Faculty who taught by using lecture and discussion or media believed that faculty should be doing more experimenting with educational technology.

All groups, even those that taught mainly by computer, felt that at times technology is moving too rapidly in our educational system.

7. **How Faculty Felt Toward Educational Technology in Relation to Their Curriculum:** Two groups of faculty that stood out were those in the Math-Science field and those teaching in the Social Science curriculum.

The Math-Science faculty were the most positive in regard to the use of technology in education, while the Social Science faculty did not see it as beneficial for education as did faculty in the other curriculums.

8. How Students Felt Toward Educational Technology in Relation to Their Major Curriculums: Two groups of students that stood out were those in the Math-Science field and those with a major in the Social Science curriculum.

The Math-Science students were the most positive in regard to the use of technology in education whereas the Social Science students did not see it as beneficial for education as did students in the other curriculums.

9. How Faculty Felt Toward Educational Satellite Communications in Relation to Their Discipline: All faculty represented in each of the various disciplines were very supportive of satellite education. Faculty teaching Technology courses showed the most favorable attitude toward education by satellite. Faculty who teach in the Health Science field were the least receptive to some of the ideas about what satellites are doing for education but over 80% felt that teaching with satellites is an exciting concept.

10. How Students Felt About Educational Satellite Communications in Relation to Their Major Curriculum: Students were middle-of-the-road when it came to indicating they would take a course via satellite. Technology students showed a very positive opinion relative to the use of satellites whereas Social Science students had the least favorable opinions. Math-Science students showed the least resistance in taking a course via satellite whereas the Communications students showed the most opposition.

Recommendations Based on the Results of the Study

Once the information was gathered for the above statements, a total picture of the students, faculty, and administrators became clear and the following recommendations were then proposed.

1. Purchase Satellite Dish - By doing this, it will be possible to demonstrate to the individuals involved as to what information is presently being sent from satellites at no expense to the downlink sites. This will help with individuals who expressed negative feelings toward the technology and at the same time take care of some of the hardware requirements for interactive instruction by satellite.

2. Public Relations - If the schools involved should decide to use satellites as a distance learning system, one of the first steps to be taken is that of informing the users. This informational program should include the viewing of existing satellite programming and an explanation of how interaction occurs.

The administrators, faculty, and students should be able to talk with individuals, using a satellite system, in order to obtain information which is not always covered in large group meetings or through informational literature.

3. **Budget** - Many schools did not report a budget for alternative delivery systems. A sharing of information should be undertaken with schools that are presently using satellites for curriculum support in order to discover all areas requiring funding and the possible hidden cost that might exist.

4. **Curriculum Selection** - As stated earlier, some curriculums will lend themselves more readily to satellite technology than will others. Each school should conduct an investigation to find out what these curriculums might be and then begin the use of satellite technology with the ones that show the least resistance. To not do this could prove to be counter-productive.

5. **Technology Integration** - If institutions decide to use an interactive satellite system, they should begin instructing faculty in the best ways of integrating the technology within their daily teaching. Doing this would help to decrease the possible apprehension experienced by those faculty that would be using satellites as part of their teaching. Too many times faculty are given the hardware and material for utilizing technology but are not instructed in how it is to be used.

6. **Services Available** - It was determined that many of the faculty were not aware of facilities and services related to educational technology that presently existed at their school. An on-going program to inform faculty about what is available should begin as soon as possible even though the actual use of satellites may not occur in the near future.

FURTHER STUDY

As stated earlier, this study was looking at a specific group of community colleges and the information applies specifically to them. Even though the findings apply to this group of colleges, the findings can be generalized for any educational setting.

The recommendations were drawn from the information gathered in this particular study. Other possible recommendations could have been made, however those listed are the ones believed to be the most crucial for identifying procedures for adopting and using an educational satellite system as a distance learning tool. Further study might be of value for identifying additional procedures to enhance the adoption and use of satellite technology.

One major concept that has been drawn from the study is to not let hardware determine the way courses will be taught. Involvement of the users from the initial investigative stages is essential when considering an educational satellite system as a form of instruction.

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